INDIANA DEPARTMENT OF TRANSPORTATION

INTER-DEPARTMENT COMMUNICATION
Standards Section -- Room N642

March 17, 1999

DESIGN MEMORANDUM No. 99-02
TECHNICAL ADVISORY

TO: **All Design, Operations and District Personnel, and Consultants**

FROM: ***/s/ Richard L. VanCleave***
Richard L. VanCleave
Design Policy Engineer
Technical Services Division

SUBJECT: **National Cooperative Highway Research Program (NCHRP) Report 350 Guardrail, Bridge Railing Transition, and End Treatment Requirements**

SUPERSEDES: **Design Memoranda 98-02 and 98-10 Technical Advisories**

EFFECTIVE: **Immediately**

The Federal Highway Administration requires that all guardrail and other roadside hazard protection devices be crashworthy in accordance with NCHRP 350. This took effect at the beginning of federal fiscal year 1999, on October 1, 1998. We have revised and added the appropriate standard documents so as to be in compliance with this FHWA requirement. The standard drawings and recurring special provisions were included in the update set effective September 1, 1998. Design policy is not being affected by this memorandum.

1. REGULAR GUARDRAIL RUNS. Blockouts have been changed from steel to timber. This change does not affect the guardrail quantities required, the detailing required on the plans, or the pay item names or pay units. All posts must be 2130 mm (7 ft) long. These changes may affect the unit price of guardrail.

Guardrail quantities which have been separated into those with 1830 mm (6 ft) posts and those with 2130 mm (7 ft) posts must now be combined, all under the pay item Guardrail, W-Beam, 1.905 m Spacing (Guardrail, W-Beam, 6′-3″ Spacing). Pay item names which include the phrase Long Post have been obsoleted by our Contracts Section.

2. GUARDRAIL TRANSITIONS TO CONCRETE BRIDGE RAILINGS. For the guardrail transition type TGB, the post spacing has been shortened, and the posts and blockouts have been changed from timber to steel. The guardrail posts are still 1830 mm (6 ft) long.

The guardrail transition type WGB is unchanged. However, the guardrail transition type WGB and the bridge railing transition type WGB may only be used where there is less than 7.6 m (25 ft) of guardrail required between a curved W-beam connector system and the beginning of the guardrail transition. This change does not affect the guardrail transition quantities required, the detailing required on the plans, or the pay item names or pay units.

3. CONCRETE BRIDGE RAILING TRANSITIONS. The standard details for the 840 mm (2'-9") common height concrete bridge railing transition have been revised to add more reinforcement in the concrete. Its designation has been changed to TBC. Details for the 1170 mm (3'-10") truck height concrete bridge railing transition have been standardized. Its designation is TBT. The pay units are unchanged, however, the pay item names are now as follows:

Concrete bridge railing transition TGB becomes TBC, and its pay item number is 706-05732.
Concrete bridge railing transition TBT is new pay item 706-05734.

4. STANDARD DRAWINGS REQUIRED. The standard drawings and corresponding concrete bridge railing transitions for each type of guardrail transition are as follows:

Guardrail Transition	Corresponding Standard Dwg. Series	Corresponding Bridge Railing Transition	Corresponding Standard Dwg. Series
TGB	601-TTGB (T-1)	TBC	706-TTBC (BR-1)
TGB	601-TTGB (T-1)	TBT	706-TTBT (BR-4)
WGB	601-TWGB (T-1A)	WGB	706-BRTW (BR-2)

The 706-CBRT and 706-TASE series (BR-1A and BR-2A) must be called for with all bridge railing transitions.

5. GUARDRAIL END TREATMENTS. The only INDOT standard end treatment which is in accordance with NCHRP 350, is the Combination Attenuating Terminal, which therefore must be used on the National Highway System. The appropriate recurring special provisions have been revised to reflect this. Other end treatments which are now in accordance with NCHRP 350 will be considered for standardization in the near future.

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Memorandum developed by Anthony L. Uremovich, Standards Engineer, Technical Services Division.

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